

REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the above amendments and the following remarks.

Claims 14-17, 20, and 22-24 have been amended. Support for the amendments is provided for example in Figs. 15 and 16 and paragraphs [0128]-[0144] of the published specification. (It should be noted that references herein to the specification and drawings are for illustrative purposes only and are not intended to limit the scope of the invention to the referenced embodiments.)

Claims 14, 16, 17, and 19-24 were rejected, under 35 USC §103(a), as being unpatentable over Karjalainen (US 2002/0176438) in view of Scott (US 5,832,022). Claims 15 and 18 were rejected, under 35 USC §103(a), as being unpatentable over Karjalainen in view of Scott and Atarashi et al. (US 7,298,721). To the extent that these rejections may be deemed applicable to the amended claims, the Applicants respectfully traverse as follows.

Claim 14 now defines a radio base station apparatus that: (1) encodes a plurality of types of control information, for uplink packet transmission, using mutually uncorrelated symbol patterns that differ between the plurality of types of control information and (2) spreads the plurality of types of control information after the encoding process using a single spreading code that is common to the plurality of types of control information. The symbol patterns used to encode the control information relate to symbols prior to spreading and are patterns in which one symbol is a minimum unit.

The Office Action acknowledges that Karjalainen does not disclose or suggest the instant claimed subject matter of encoding a plurality of types of control information, for uplink packet

transmission, using symbol patterns that differ between the plurality of types of control information (see Office Action page 3, lines 10-13). To overcome this deficiency, the Office Action proposes that Scott discloses, in lines 14-19 of column 26, encoding a plurality of information using symbol patterns that differ between the types of information (see page 3, lines 13-16)

However, the Applicants note that Scott discloses, in the cited sections, spreading a plurality of information using spreading codes that differ between the types of information, whereas the Applicants' claimed subject matter encodes information with symbol patterns that are uncorrelated with each other and that relate to symbols prior to spreading and are patterns in which one symbol is the minimum. Therefore, modifying Karjalainen's base station based on the teachings of Scott would produce a base station having an encoder and a spreader that both require spreading codes, and the number of spreading codes to be used would increase significantly. By contrast, the Applicants' claimed invention uses symbol patterns, which are different from spreading codes, so that the number of spreading codes to be used can be reduced.

Moreover, the instant claimed invention encodes control information using symbol patterns and spreads the encoded control information using spreading codes. By contrast, the combined teachings of Scott and Karjalainen suggest encoding by spreading codes and spreading by spreading codes. Encoding by spreading codes and spreading by spreading codes is technically faulty, and there is difficulty in combining the teachings of Scott and Karjalainen.

Accordingly, the Applicants submit that the teachings of Karjalainen and Scott, even if combined as proposed in the Office Action, still would lack the above-noted features of claim 14, and thus these references, considered individually or in combination, do not render obvious

subject matter now defined by claim 14. Independent claims 15-17, 20, and 22-24 now similarly recite the above-mentioned subject matter distinguishing apparatus claim 14 from Karjalainen, though claims 22 and 23 do so with respect to methods and claims 20 and 23 do so with respect to an inverse operation of that occurring in claim 14. As pertains to claim 15, Atarashi is not cited in the Final Rejection for supplementing the teachings of Karjalainen and Scott with respect to the above-mentioned subject matter distinguishing claim 14 from these references. Therefore, the rejection applied to claim 18 is obviated, and allowance of claims 14-17, 20, and 22-24 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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Date: December 15, 2009
JEL/DWW/att

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